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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/284,114	04/07/99	SAKAGUCHI S	07898/038001

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EXAMINER	
KERR, J	

ART UNIT	PAPER NUMBER
1633	12.

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Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary	Application No. 09/284,114	Applicant(s) SAKAGUCHI, SHIMON	
	Examiner Janet Kerr	Art Unit 1633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 February 2001* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15) ☒ Notice of References Cited (PTO-892)
16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
18) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
19) ☐ Notice of Informal Patent Application (PTO-152)
20) ☐ Other: .

Response to Amendment

Applicant's amendment, filed 2/6/01, has been entered.

Claims 1-11 remain pending.

Claim Rejections - 35 USC § 101

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-5 remain rejected under 35 U.S.C. 101 as the claimed invention is directed to non-statutory subject matter, for the reasons of record and the reasons below.

The claims are drawn to an SKG mouse which has not been altered by the hand of man, and is a naturally occurring animal. The claims read on a product of nature which is non-statutory subject matter.

Applicant's arguments, filed 2/6/01, have been fully considered but they are not persuasive.

It is argued that the United States Patent and Trademark Office is not adverse to allowing claims directed to inbred mouse strains that were developed by selection and specific breeding over multiple generations, citing U.S. Patent No. 6,040,495. In this regard, it is asserted that the inbred mouse of the instant invention was similarly developed by selection and specific breeding over multiple generations. It is argued that the declaration submitted by inventor Dr. Sakaguchi sets forth how the hand of man was necessary to develop the new inbred mouse strain of the claimed invention and that without the inventive identification of the mutation by the inventor, and without the hand of man, the claimed inbred strain could not have been developed. It is asserted that declarant Sakaguchi selected a specific breeding strategy to detect recessive mutations (see page 5 of applicant's Response).

These arguments are not persuasive. With regard to U.S. Patent No. 6,040,495 ('495), it should be noted, initially, that each application is examined on its own merits. Moreover, it

should be noted that the patented mouse obtained through 70 generations of sib-matings results in a mouse "NS:Hr/ICR hairless mice" which comprise a distinct phenotype compared to the parental mouse. For example, in column 2, lines 18-29 of '495, the specification teaches that a male hairless mouse of the ICR strain was mated with a female hairless mouse, and brother-sister matings were repeated for 70 generations to obtain the patented NS:Hr/ICR hairless mice. Table 6 (see column 7 of '495) clearly distinguishes the NS:Hr/ICR hairless mice from the original ICR mouse in that all of the NS:Hr/ICR hairless mice succumbed to a complete infection with *H. pylori* while *H. pylori* infection was slightly observed in the other test animals, including the ICR mouse (see, e.g., column 7, line 50 through column 8, line 13). Thus, the patented mice and the original mouse strain from which the patented mice were obtained are distinct.

With regard to the mice of the instant invention, the specification does not provide any objective evidence that a phenotypic trait distinguishes the claimed mice from the mouse detected in applicant's colony. As indicated in the previous Office actions, applicant noted a mouse, which naturally (spontaneously) occurred in the colony, and which had slight joint swelling. Applicant determined that this mouse suffered from symptoms associated with rheumatoid arthritis (see pages 4-5 of the instant application). No difference is evident between the mouse that occurred spontaneously and the claimed mouse.

The declaration under 37 CFR 1.132 filed 2/6/01 is insufficient to overcome the rejection of claims 1-5 based upon 35 U.S.C. 101 as set forth in the last Office action for the following reasons.

It is asserted that without the inventive identification of the mutation, and without the "hand of man" or selective breeding and further characterization, the claimed inbred strain could not have been developed. It is argued that without the discovery and recognition of the new strain and the inbreeding, isolation, testing, further inbreeding and further testing to confirm the presence of a new inbred strain, the mutation giving rise to the SKG phenotype would have been lost and never would have been "made" or "manufactured" into the new and useful product of the claimed invention (see paragraph 4 of the declaration). This is not persuasive, for the reason

indicated above, i.e., the mutation naturally occurred in the Balb/c colony, and there are no distinguishing features between the phenotype of the mouse harboring the naturally occurring mutation and the claimed mouse.

Declarant Sakaguchi states, in paragraph 6 of the declaration, that the Balb/c strain were maintained in a closed colony for detection of any immunologically altered mice as a result of naturally occurring alterations in their genome and the mice were inspected for any visually discernable abnormalities. Thus, applicant was inspecting mice that were generated via naturally occurring breeding within the colony. As such, the parental mice and the progeny are products of nature as they are naturally occurring animals.

In paragraph 7 of the declaration, it is indicated that the Balb/c mouse colony was maintained for nearly one and a half years before a female mouse with joint swelling was found by the inventor. It is noted that applicant found the mouse, the mouse was not manipulated by the "hand of man" to obtain a mouse with joint swelling. The female mouse (SKG mouse) was then bred to a "normal" male mouse of the same colony; progeny of these mice displayed the joint swelling. Declarant Sakaguchi indicates that the male mouse also bore the mutation. From these statements, it is readily apparent that not only the female SKG mouse but other mice in the colony naturally contained the mutation which results in a joint swelling phenotype. While applicant detected the joint swelling phenotype, applicant did not modify the mice already present in the colony to obtain a new strain of mouse which is characterized by a joint swelling trait. Thus, the claimed mouse is a product of nature. Should applicant present evidence in which the claimed mouse is clearly distinguishable from the Balb/c mouse of the colony, the distinguishing features resulting from modification of the mouse by inventor Sakaguchi, the evidence will be considered.

For the reasons of record, and the reasons set forth above, the rejection is maintained.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-11 remain rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for an SKG BALB/c mouse strain that develops natural onset rheumatoid arthritis, and methods of producing and using the mouse strain, does not reasonably provide enablement for an SKG BALB/c mouse strain that develops natural onset of autoimmune arthritis, and methods of producing and using the mouse strain. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims, for the reasons of record and the reasons below.

As set forth in the previous Office actions, the claimed mice and methods of use are not commensurate in scope with the teachings in the specification.

Applicant's arguments, filed 2/6/01, have been fully considered but they are not persuasive.

Applicant has indicated that the embryos of the claimed mice will be deposited in a Budapest Treaty-authorized depository to overcome this rejection. Deposition of the embryos will not overcome this rejection as the specification only discloses mice displaying a rheumatoid arthritis phenotype as stated in the previous Office actions. There is no disclosure of any other types of autoimmune arthritis or symptoms associated with other types of autoimmune arthritis, which are present in the claim-designated mouse strain, or other mice obtained from breeding the claim-designated mouse strain with BALB/c mice or non-BALB mice strains. The specification does not provide any guidance or working examples as to how to make other mice strains which display symptoms/pathologies associated with autoimmune arthritis other than those observed with rheumatoid arthritis. Thus, while the specification is enabling for the SKG mouse which displays the disclosed symptoms associated with rheumatoid arthritis, the specification is not enabling for the broadly claimed mice or methods of using the mice.

Applicant's intent to comply with the deposit requirements upon indication of allowable subject matter (see page 5 of applicant's Response) is acknowledged.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-11 remain rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention for the reasons of record and the reasons below.

Claims 1, 3, 5, 6, 8, and 10 remain vague and indefinite by the phrase "autoimmune arthritis" as the specification only discloses symptoms associated with rheumatoid arthritis. As autoimmune arthritis encompasses rheumatoid arthritis, but is not limited to rheumatoid arthritis, it is unclear what symptoms are displayed or what the phenotype is of a mouse afflicted with autoimmune arthritis.

Claim 10 remains confusing because it is unclear how determining whether a potential therapy decreases a symptom of autoimmune arthritis identifies a therapy that decreases a symptom of rheumatoid arthritis. While autoimmune arthritis encompasses rheumatoid arthritis, symptoms associated with autoimmune arthritis are not restricted to rheumatoid arthritis, thus a symptom of autoimmune arthritis is not necessarily a symptom of rheumatoid arthritis. It is unclear what the nexus is between identification of a therapy that decreases a symptom of autoimmune disease and identification of a therapy that decreases a symptom of rheumatoid arthritis.

Applicant has not provided any new arguments regarding the above 35 U.S.C. 112, second paragraph rejections. The rejections are maintained for the reasons set forth in the Office action of 8/1/00.

Claims 1 and 6 are further rendered vague and indefinite by the phrase "derived from" as it is unclear what type of derivation is intended. The term "derived" should be deleted to overcome this rejection.

No claims are allowed.

Should applicant provide persuasive evidence that the SKG mouse strain is distinguishable from the naturally occurring mouse of the BALB/c colony to overcome the 35 U.S.C. 101 rejection, appropriately deposit embryos of the mouse, and overcome the 35 U.S.C. 112 first and second paragraph rejections, claims directed to the deposited mouse and methods of using the deposited mouse would be considered favorably.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for response to this final action is set to expire THREE MONTHS from the date of this action. In the event a first response is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event will the statutory period for response expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janet M. Kerr whose telephone number is (703) 305-4055. Should the examiner be unavailable, inquiries should be directed to Deborah Clark, Supervisory Primary

Examiner of Art Unit 1633, at (703) 305-4051. Any administrative or procedural questions should be directed to Kimberly Davis, Patent Analyst, at (703) 305-3015. Papers related to this application may be submitted to Group 1600 by facsimile transmission. Papers should be faxed to Group 1600 via the PTO Fax Center located in Crystal Mall 1. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The CM1 Fax Center number is (703) 305-7401.

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